

2. (ONCE AMENDED) An apparatus as in claim 1, wherein the optical transmitter comprises:

an adjusting circuit adjusting said at least one of the rise time and fall time in accordance with the characteristics of the signal light at the receiver.

a ( 3. (ONCE AMENDED) An apparatus as in claim 1, wherein the optical transmitter comprises:

a light source emitting a light;

a modulation signal generator generating an electrical modulation signal having a corresponding rise time and fall time;

an adjusting circuit adjusting at least one of the rise time and fall time of the electrical modulation signal in accordance with the characteristics of the signal light at the receiver; and

a modulator modulating the emitted light with the adjusted electrical modulation signal, to thereby produce said signal light having at least one of the rise time and fall time of the signal light adjusted.

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4. (NOT AMENDED) An apparatus as in claim 1, wherein the transmitter adjusts both the rise time and the fall time.

5. (NOT AMENDED) An apparatus as in claim 2, wherein the adjusting circuit adjusts both the rise time and the fall time.

6. (NOT AMENDED) An apparatus as in claim 1, wherein the transmitter lengthens both the rise time and the fall time.

7. (NOT AMENDED) An apparatus as in claim 1, wherein the transmitter shortens both the rise time and the fall time.

8. (NOT AMENDED) An apparatus as in claim 1, wherein the transmitter adjusts both the rise time and the fall time to maintain amplitude deterioration and phase margin of the transmitted signal light within a specific range.

9. (CANCELED)

10. (CANCELED)

Sub C3 } 11. (ONCE AMENDED) An apparatus as in claim 1, wherein the transmitter performs one of the group consisting of  
lengthening both the rise time and the fall time in accordance with the characteristics of the signal light at the receiver,  
shortening both the rise time and the fall time in accordance with the characteristics of the signal light at the receiver, and  
adjusting both the rise time and the fall time to maintain amplitude deterioration and phase margin of the transmitted signal light within a specific range in accordance with the characteristics of the signal light at the receiver.

12. (ONCE AMENDED) An apparatus as in claim 1, further comprising:  
a controller controlling the transmitter to adjust said at least one of the rise time and fall time in accordance with the characteristics of the signal light at the receiver.

13. (NOT AMENDED) An apparatus as in claim 3, wherein the modulator modulates the emitted light via one of the group consisting of optical phase modulation and optical frequency modulation.

14. (NOT AMENDED) An apparatus as in claim 1, further comprising:  
a dispersion compensator compensating for wavelength dispersion characteristics of the transmission path.

15. (NOT AMENDED) An apparatus as in claim 1, further comprising:  
a plurality of said optical transmitters, each transmitting a respective signal light having a different wavelength than the signal lights of the other optical transmitters; and  
an optical multiplexer multiplexing the signal lights together into a wavelength division multiplexed (WDM) signal which is transmitted through the transmission path.

Sub C5 } 16. (ONCE AMENDED) An apparatus comprising:  
an adjusting circuit adjusting at least one of a rise time and a fall time of an electrical

modulation signal; and

a modulator modulating a light with the adjusted electrical modulation signal, wherein the adjusting circuit adjusts said at least one of the rise time and the fall time in accordance with characteristics of the modulated light as received by a receiver through a transmission path.

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17. (NOT AMENDED) An apparatus as in claim 16, wherein the adjusting circuit adjusts both the rise time and the fall time.

18. (NOT AMENDED) An apparatus as in claim 16, wherein the adjusting circuit lengthens both the rise time and the fall time.

19. (NOT AMENDED) An apparatus as in claim 16, wherein the adjusting circuit shortens both the rise time and the fall time.

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Sub C6  
20. (ONCE AMENDED) An apparatus as in claim 16, wherein the adjusting circuit adjusts both the rise time and the fall time to maintain amplitude deterioration and phase margin of the modulated light within a specific range.

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21. (CANCELED)

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Sub C7  
22. (ONCE AMENDED) An apparatus as in claim 16, further comprising:  
a controller controlling the adjusting circuit to adjust said at least one of the rise time and fall time in accordance with the characteristics of the signal light at the receiver.

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23. (NOT AMENDED) An apparatus as in claim 16, wherein the modulator modulates the light via one of the group consisting of optical phase modulation and optical frequency modulation.

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Sub C8  
24. (ONCE AMENDED) An apparatus as in claim 16, further comprising:  
a dispersion compensator compensating for wavelength dispersion characteristics of the transmission path.

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25. (NOT AMENDED) An apparatus as in claim 16, wherein the adjusting circuit

comprises:

- a electrical amplifier amplifying the electrical modulation signal; and
- a filter filtering the amplified electrical modulation signal.

26. (NOT AMENDED) An optical communication system comprising:  
a transmitter including an adjusting circuit adjusting at least one of a rise time and a fall time of an electrical modulation signal, and a modulator modulating a light with the adjusted electrical modulation signal, the transmitter transmitting the modulated light through a transmission path;  
a receiver receiving the transmitted, modulated light through the transmission path; and  
a controller controlling the adjusting circuit to adjust said at least one of the rise time and fall time in accordance with characteristics of the modulated light at the receiver.

27. (NOT AMENDED) An optical communication system as in claim 26, wherein the controller controls the adjusting circuit to perform one of the group consisting of  
lengthening both the rise time and the fall time in accordance with characteristics of the modulated light at the receiver,  
shortening both the rise time and the fall time in accordance with characteristics of the modulated light at the receiver, and  
adjusting both the rise time and the fall time to maintain amplitude deterioration and phase margin of the modulated light within a specific range in accordance with characteristics of the modulated light at the receiver.

Sub  
C10  
28. (ONCE AMENDED) An apparatus comprising:  
an adjusting circuit adjusting at least one of a rise time and a fall time of a modulation signal; and  
a modulator modulating a light with the adjusted modulation signal, wherein the adjusting circuit adjusts said at least one of the rise time and the fall time in accordance with characteristics of the modulated light as received by a receiver through a transmission path.

29. (NOT AMENDED) An apparatus as in claim 28, wherein the adjusting circuit performs one of the group consisting of:  
adjusting both the rise time and the fall time,

lengthening both the rise time and the fall time, and  
shortening both the rise time and the fall time.

30. (CANCELED)

31. (ONCE AMENDED) An apparatus as in claim 28, further comprising:  
a controller controlling the adjusting circuit to adjust said at least one of the rise time and  
fall time in accordance with the characteristics of the modulated light at the receiver.

32. (NOT AMENDED) An apparatus as in claim 28, wherein the adjusting circuit  
comprises:

an amplifier amplifying the modulation signal; and  
a filter filtering the amplified modulation signal.

33. (ONCE AMENDED) A method comprising:  
adjusting at least one of a rise time and a fall time of a signal light in accordance with  
characteristics of the signal light as received by a receiver through a transmission path; and  
transmitting the adjusted signal light through the transmission path to the receiver.

34. (CANCELED)

35. (ONCE AMENDED) A method comprising:  
adjusting at least one of a rise time and a fall time of a modulation signal;  
modulating a light with the adjusted modulation signal;  
transmitting the modulated light through a transmission path; and  
receiving the transmitted, modulated light from the transmission path, wherein said  
adjusting adjusts said at least one of the rise time and the fall time in accordance with  
characteristics of the transmitted, modulated light as received by said receiving.

36. (CANCELED)

37. (ONCE AMENDED) An apparatus comprising:  
means for adjusting at least one of a rise time and a fall time of a modulation signal; and